

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS

For: Terra

Date: Sunday, December 17, 2017

PA 441-26 Production PJR

API# 05-045-23649-00

Sincerely,

Grand Junction Cement Engineering

2.0 Real-Time Job Summary

2.1 Job Event Log

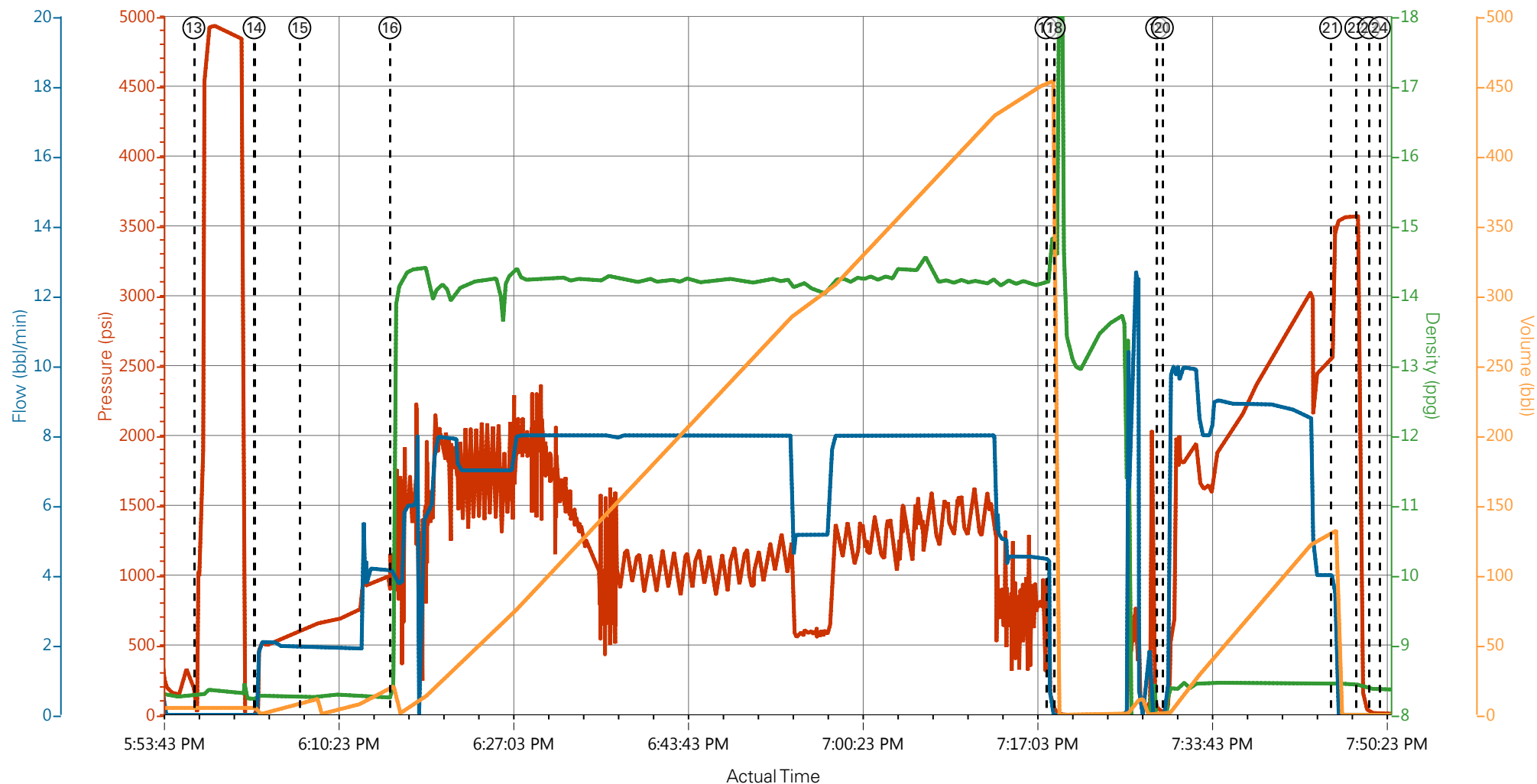
Type	Seq. No.	Graph Label	Date	Time	Source	Pass-Side Pump Pressure (psi)	Downhole Density (ppg)	Combined Pump Rate (bbl/min)	Pump Stage Total (bbl)	Comments
Event	1	Call Out	12/17/2017	05:00:00	USER					Crew called out for job. On location at 11:00.
Event	2	Pre-convoy Safety Mtg	12/17/2017	08:25:00	USER					Discussed travel related safety issues with crew.
Event	3	Travel to Location	12/17/2017	08:30:00	USER					Crew safely traveled to location. Start journey management.
Event	4	Arrive At Location	12/17/2017	10:00:00	USER					End journey management. Checked in with company man. Mix Water Test, PH-8, Chlorides 400, 50 degrees.
Event	5	Well Information	12/17/2017	10:01:00	USER					Customer: Craig Borgstede TD: 8520', Casing: 4.5" 11.6 lb 0'-8510', OH: 8.75" 1150'-8520', Prev Casing: 9.625" 32.3 lb 0'-1150', Shoe Joint: 31', WBM: 12.9 ppg. 800 bbls fresh water in rig tanks, need 460 bbls for primary cement job.
Event	6	Jobsite Assessment	12/17/2017	10:05:00	USER					Identify and discuss all location related safety issues with crew. Discussed how to spot equipment and rig up. Reviewed JSA.
Event	7	Spot Equipment	12/17/2017	10:10:00	USER					Used spotters to get equipment into position.
Event	8	Rig-Up Equipment	12/17/2017	10:15:00	USER					Rigged up iron, hoses, two silos, and bulk truck to the Pump Truck.
Event	9	Wait On Order	12/17/2017	12:00:00	USER	-1.00	0.00	0.00	0.9	Waiting on rig to finish running casing and circulate well.
Event	10	Pre Job	12/17/2017	17:30:00	USER	2.00	0.00	0.00	0.9	Discussed all job related safety issues and pump schedule with crew and all involved parties on

location. Finished rigging up the floor using our 4 1/2" Cement head, Positive displacement manifold, and bails.

Event	11	Start Job	12/17/2017	17:45:00	USER	5.00	8.32	0.00	0.0	Started Job
Event	12	Fill Lines	12/17/2017	17:50:39	USER	39.00	8.35	0.00	0.0	5 bbls water
Event	13	Pressure Test	12/17/2017	17:56:53	USER	214.00	8.28	0.00	5.0	500 psi kickout test, 5000 psi high psi test
Event	14	Pump Water Spacer	12/17/2017	18:02:38	USER	30.00	8.23	0.80	0.0	10 bbls Water Spacer
Event	15	Pump Mud Flush Spacer	12/17/2017	18:07:00	USER	600.00	8.26	1.90	8.7	20 bbls Mud Flush
Event	16	Pump Primary Cement	12/17/2017	18:15:35	USER	1007.00	9.01	4.20	20.4	452 bbls Cement, 1825 sks, 14.2 ppg, 1.39 cuft/ft, 6.36 gal/sk
Event	17	Shutdown	12/17/2017	19:18:11	USER	213.00	14.22	0.70	453.7	Shutdown
Event	18	Clean Lines	12/17/2017	19:18:58	USER	17.00	15.00	0.00	0.0	Wash pumps and lines to the pit.
Event	19	Drop Plug	12/17/2017	19:28:44	USER	21.00	0.26	0.00	0.7	Customer to witness dropping plug.
Event	20	Pump Displacement	12/17/2017	19:29:17	USER	25.00	4.46	0.60	0.0	Total displacement 132 bbls KCL water (we added one sack of KCL in every 10 bbls). Added 1 gallon of MMCR in first 10 bbls and 3 # of BE 6 in the first 30 bbls. Slowed rate to 2 bpm at 120 away.
Event	21	Bump Plug	12/17/2017	19:45:20	USER	2912.00	8.43	4.00	131.6	Landed plug at 131.9 bbls away. We had full returns during displacement. 2487 psi calculated differential pressure, pressure up 1000 psi over final circulating pressure for plug as per company rep. Final circulating pressure 2640.
Event	22	Check Floats	12/17/2017	19:47:44	USER	3370.00	8.43	0.00	0.0	Checked floats, floats held, 2 bbls back to the pump.
Event	23	End Job	12/17/2017	19:49:00	USER	12.00	8.37	0.00	0.0	Job complete
Event	24	Pre Rig Down	12/17/2017	19:50:00	USER	6.00	8.36	0.00	0.0	Discuss all rig down related safety issues with

										crew.
Event	25	Rig-Down Equipment	12/17/2017	19:55:00	USER	1.00	0.96	0.00	0.0	Rigged down all equipment and lines.
Event	26	Travel to Home	12/17/2017	20:55:00	USER					Discuss all travel related safety issues with crew.
Event	27	Depart Location for Home	12/17/2017	21:00:00	USER					Thank you for your business! KC Smith and crew.

Terra Energy, Tri State Trucking PA 441-26, 4 1/2" Production



PS Pump Press (psi) DH Density (ppg) Comb Pump Rate (bbl/min) Pump Stg Tot (bbl)

① Call Out n/a;n/a;n/a;n/a	⑧ Rig-Up Equipment n/a;n/a;n/a;n/a	⑮ Pump Mud Flush Spacer 600;8.26;1.9;8.7	22 Check Floats 3370;8.43;0;0
② Pre-convoy Safety Mtg n/a;n/a;n/a;n/a	⑨ Wait On Order -1;0;0;0.9	⑯ Pump Primary Cement 1007;9.01;4.2;20.4	23 End Job 12;8.37;0;0
③ Travel to Location n/a;n/a;n/a;n/a	⑩ Pre Job 2;0;0;0.9	⑰ Shutdown 213;14.22;0.7;453.7	24 Pre Rig Down 6;8.36;0;0
④ Arrive At Location n/a;n/a;n/a;n/a	⑪ Start Job 5;8.32;0;0	⑱ Clean Lines 17;15;0;0	25 Rig-Down Equipment 1;0.96;0;0
⑤ Well Information n/a;n/a;n/a;n/a	⑫ Fill Lines 39;8.35;0;0	⑲ Drop Plug 21;0.26;0;0.7	26 Travel to Home n/a;n/a;n/a;n/a
⑥ Jobsite Assessment n/a;n/a;n/a;n/a	⑬ Pressure Test 214;8.28;0;5	20 Pump Displacement 25;4.46;0.6;0	27 Depart Location for Home n/a;n/a;n/a;n/a
⑦ Spot Equipment n/a;n/a;n/a;n/a	⑭ Pump Water Spacer 30;8.23;0.8;0	21 Bump Plug 2912;8.43;4;131.6	

▼ HALLIBURTON | iCem® Service

Created: 2017-12-17 11:45:31, Version: 4.2.393

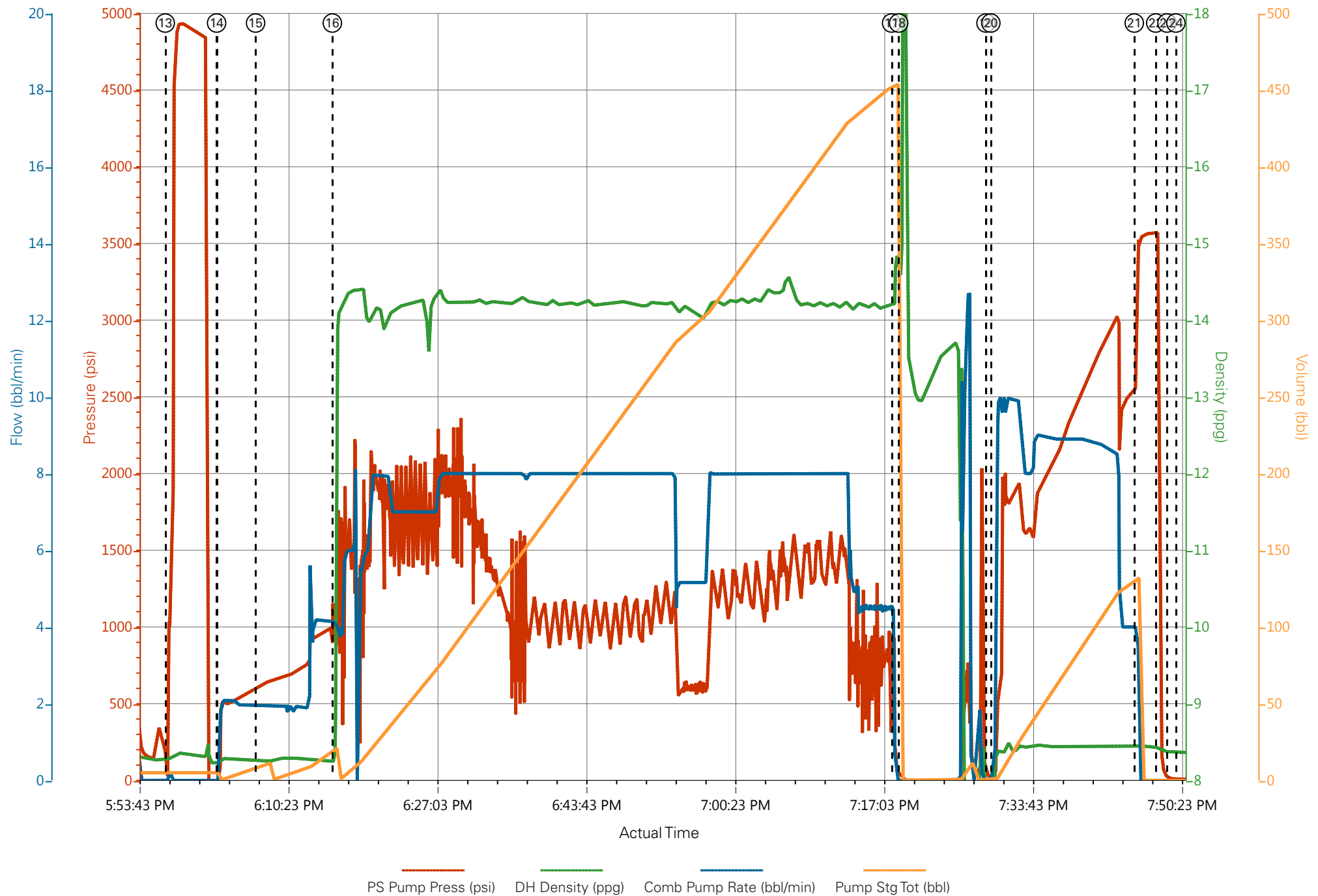
Edit

Customer : TERRA ENERGY LTD.
Representative : Craig Borgstede

Job Date : 12/17/2017 11:50:25 AM
Sales Order # : 904506022

Well : PA 441-26
Elite : 11247128/ Adam Angelo

Terra Energy, Tri State Trucking PA 441-26, 4 1/2" Production



Job Information

Request/Slurry	2437939/1	Rig Name	H&P 271	Date	12/DEC/2017
Submitted By	Lukas Van Zyl	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	PA 441-26

Well Information

Casing/Liner Size	4.5 in	Depth MD	8615 ft	BHST	102°C / 215°F
Hole Size	8.75 in	Depth TVD	7948 ft	BHCT	63°C / 145°F
Pressure	5284 psi				

Drilling Fluid Information

Mud Supplier Name	AMC	Mud Trade Name		Density	
--------------------------	-----	-----------------------	--	----------------	--

Cement Information - Primary Design



<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		HalCem Primary				Slurry Density	14.2	lbm/gal
						Slurry Yield	1.387	ft3/sack
						Water Requirement	6.36	gal/sack
						Total Mix Fluid	6.36	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

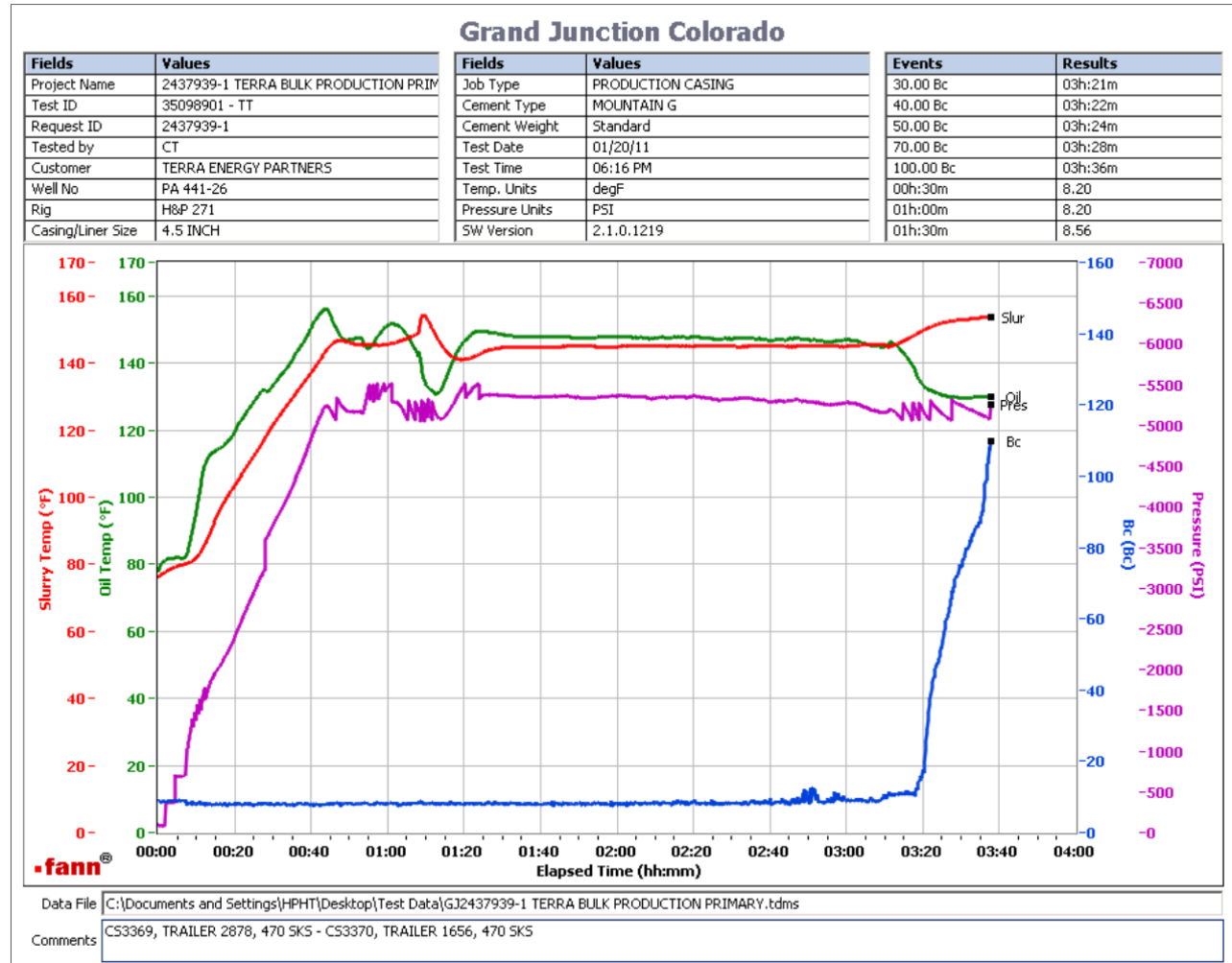
This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or concern receiving such report from Halliburton. This report is for information purposes only and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage regardless of cause, including any act or omission of Halliburton, resulting from the use hereof.

Operation Test Results Request ID 2437939/1

Thickening Time - ON-OFF-ON

14/DEC/2017

Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
145	5284	43	3:21	3:24	3:28	3:36	9	53	15	8



1680 sks
 CS3369, Trailer 2878, 470 sks
 CS3370, Trailer 1656, 470 sks
 No deflection.

This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or concern receiving such report from Halliburton. This report is for information purposes only and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage regardless of cause, including any act or omission of Halliburton, resulting from the use hereof.

Operation Test Results Request ID 2437939/2

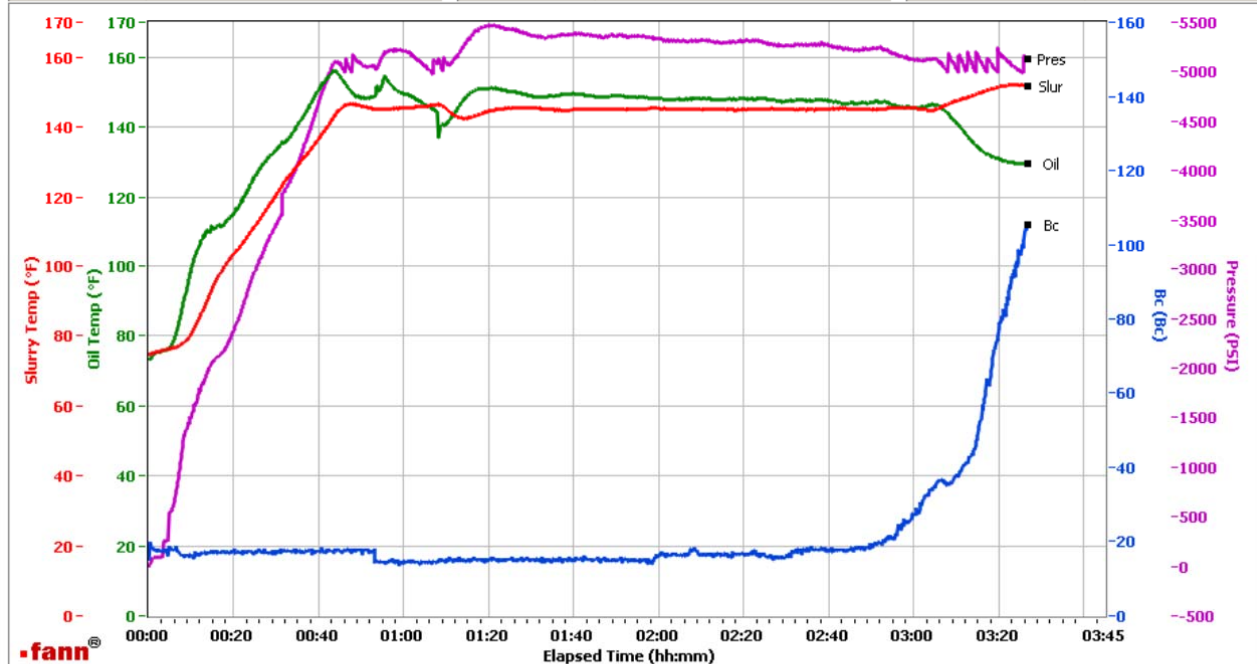
Thickening Time - ON-OFF-ON

14/DEC/2017

Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
145	5284	43	3:01	3:15	3:18	3:25	15	53	15	15

Grand Junction Colorado

Fields	Values	Fields	Values	Events	Results
Project Name	2437939-2 TERRA BULK PRODUCTION PRIM	Job Type	PRODUCTION CASING	30.00 Bc	03h:01m
Test ID	35098901 - TT	Cement Type	MOUNTAIN G	40.00 Bc	03h:11m
Request ID	2437939-2	Cement Weight	Standard	50.00 Bc	03h:15m
Tested by	CT	Test Date	12/14/17	70.00 Bc	03h:18m
Customer	TERRA ENERGY PARTNERS	Test Time	06:51 AM	100.00 Bc	03h:25m
Well No	PA 441-26	Temp. Units	degF	00h:30m	17.21
Rig	H&P 271	Pressure Units	PSI	01h:00m	14.66
Casing/Liner Size	4.5 INCH	SW Version	2.1.0.507	01h:30m	15.11



Data File C:\Documents and Settings\Administrator\Desktop\Test Data\GJ2437939-2 TERRA BULK PRODUCTION PRIMARY.tdms

Comments CS3371, TRAILER 8476, 470 SKS - CS3372, TRAILER 4064, 270 SKS

1680 sks
CS3371, Trailer 8476, 470 sks
CS3372, Trailer 4064, 270 sks
No deflection.

This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or concern receiving such report from Halliburton. This report is for information purposes only and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage regardless of cause, including any act or omission of Halliburton, resulting from the use hereof.

Operation Test Results Request ID 2437939/3

Thickening Time - ON-OFF-ON

15/DEC/2017

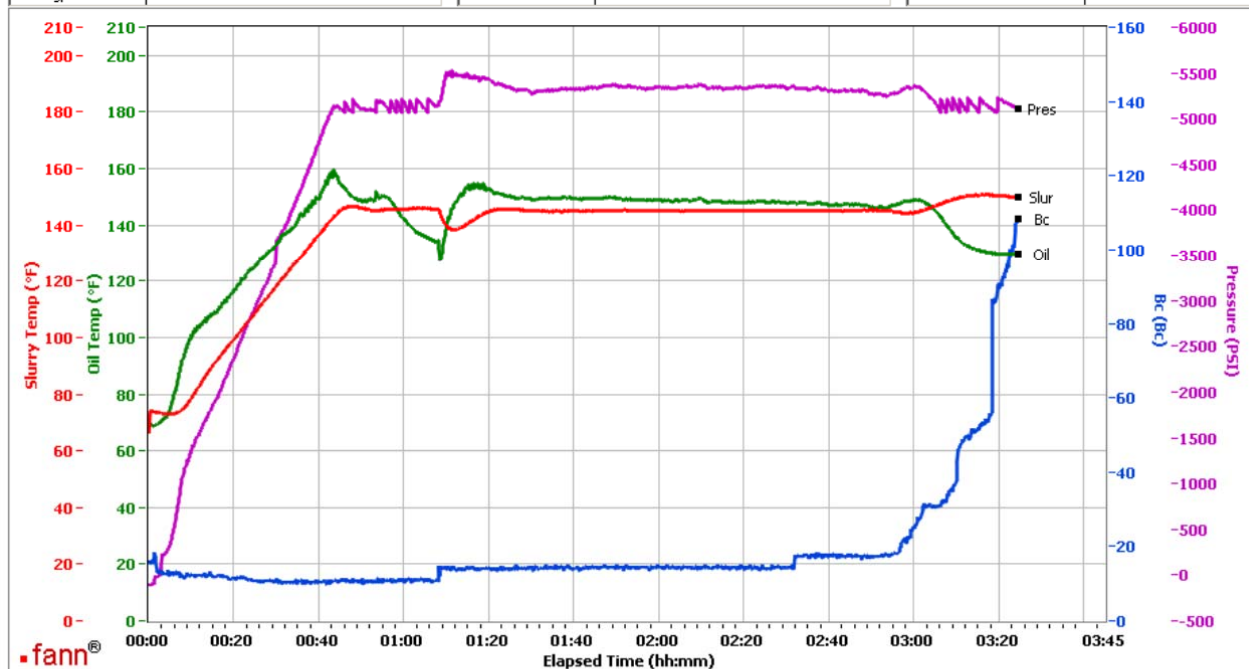
Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
145	5284	43	3:02	3:13	3:18	3:23	16	53	15	15

Grand Junction, Colorado

Fields	Values
Project Name	2437939-3 TERRA BULK PRODUCTION PRIM
Test ID	35107071 - TT
Request ID	2437939-3
Tested by	CT
Customer	TERRA ENERGY PARTNERS
Well No	PA 441-26
Rig	H&P 271
Casing/Liner Size	4.5 INCH

Fields	Values
Job Type	PRODUCTION CASING
Cement Type	MOUNTAIN G
Cement Weight	Standard
Test Date	12/16/17
Test Time	04:28 AM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	03h:02m
40.00 Bc	03h:10m
50.00 Bc	03h:13m
70.00 Bc	03h:18m
100.00 Bc	03h:23m
00h:30m	11.22
01h:00m	10.63
01h:30m	14.35



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\K9Y20P2R\GJ2437939-3 TERRA BULK PRODUCTION PRIMARY[1].tdms

Comments CS3387, TRAILER 7304, 145 SKS

1825 sks Total
CS3387, Trailer 7304, 145 sks
Deflection: 11 - 15

This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or concern receiving such report from Halliburton. This report is for information purposes only and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage regardless of cause, including any act or omission of Halliburton, resulting from the use hereof.